



**RESIDENTIAL ELECTRICAL LOAD CALCULATION**  
 COMMUNITY DEVELOPMENT DEPARTMENT • BUILDING  
 DIVISION • 10300 TORRE AVENUE • CUPERTINO, CA 95014  
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Name: \_\_\_\_\_ Email: \_\_\_\_\_ Phone: \_\_\_\_\_

Address: \_\_\_\_\_ Date: \_\_\_\_\_

Permit No.: \_\_\_\_\_ Panel / Service Description: \_\_\_\_\_

Voltage: 120/240V, 1Ø

Floor area as defined in 220.5(C) for dwelling<sup>a</sup>: \_\_\_\_\_ ft<sup>2</sup>

<sup>a</sup> Floor area calculated from outside building dimensions; excludes garages, open porches, and unfinished areas.

(Per 2025 California Electrical Code (CEC) Article 220, Part III - Standard Method)

Load Description	Calculation (VA)	Net / Demand (VA)
<b>PART 1: GENERAL LIGHTING &amp; RECEPTACLE LOAD</b>		
1. General Lighting (220.41)	Floor area _____ ft <sup>2</sup> × 3 VA	_____
2. Small-Appliance Branch Circuits (210.11(C)(1) & 220.52(A)) — Includes refrigerator. Two or more 20-ampere small-appliance branch circuits.	(2 min.) × 1,500 VA	3,000
3. Laundry Branch Circuit (210.11(C)(2) & 220.52(B)) — Min. one 20-ampere circuit.	(1 min.) × 1,500 VA	1,500
<b>4. Subtotal General Load</b>	<b>Add lines 1–3</b>	_____
5. First 3,000 VA @ 100% (Table 220.42)	3,000 × 1.00	3,000
6. Remainder @ 35% (Table 220.42)	(Subtotal – 3,000) × 0.35	_____
<b>7. Net General Load</b>	<b>Add lines 5 + 6</b>	_____
<b>PART 2: FIXED APPLIANCES</b>		
8. Garbage Disposal (220.53)	Nameplate VA	_____
9. Bathroom Fan (220.53)	Nameplate VA	_____
10. Microwave (220.53)	Nameplate VA	_____
11. Dishwasher (220.53)	Nameplate VA	_____
12. Other	Nameplate VA	_____
13. Other	Nameplate VA	_____
<b>14. Net Fixed Appliance Load (CEC § 220.53): If 4 or more appliances multiply total by 0.75; otherwise, use 100%</b>	<b>Sum of Lines 8–13</b>	_____
<b>PART 3: OTHER LOADS</b>		
15. Electric Range (220.55) <sup>1</sup>	Demand from Table 220.55	_____
16. Electric Oven (if separate)	Nameplate VA	_____
17. Electric Dryer (220.54) <sup>2</sup>	Min 5,000 VA	_____
18. Hot Tub / Spa / Pool (Dedicated 240 V Circuit, CEC 680)	Nameplate VA	_____
19. Electric Water Heater / HPWH (422.13 - 230.42(A)(1)) <sup>3</sup>	Nameplate VA × 1.25	_____
20. Largest HVAC / Heating or Air Conditioning Load (CEC 220.60)	Nameplate VA	_____
21. 25% Largest Motor (430.24)	Largest motor VA × 0.25	_____
22. EV Charger (220.57 & 625.42) - (Breaker/wire 125%) <sup>4</sup>	Nameplate × 1.25	_____
23. Other Misc. Load (220.14)	Nameplate VA	_____
<b>24. Net Other Loads</b>	<b>Sum of Lines 15–23</b>	_____
<b>PART 4: FINAL ASSESSMENT</b>		
<b>25. Total Calculated Load (Art. 220)</b>	<b>Sum of all Net/Demand lines 7, 14, 24</b>	_____
26. Calculated Service Amperage (Demand) (230.79)	Line 25 ÷ 240 V	_____ Amps
27. Provided Panel Rating (Supply) <sup>5</sup>	Select next standard size (100A, 125A, 200A, 400A or other)	_____ Amps
28. Service Capacity Compliance	Line 26 (Demand) ≤ Line 27 (Supply)	<input type="checkbox"/> Yes / <input type="checkbox"/> No

- Line 15 (Electric Ready - Range/Cooktop):** For new construction, if a gas range is installed, a minimum allowance for an electric cooktop/range of 12,000 VA (50A circuit) must still be included in the calculation per CEnC § 150.0(u).
- Line 17 (Electric Ready - Dryer):** For new construction, if a gas dryer is installed, a minimum of 7,200 VA (30A circuit) must be reserved for a future electric dryer in the load calculation per CEnC § 150.0(v).
- Line 19 (Electric Ready - HPWH):** For new construction and additions, if a gas water heater is installed, the calculation must reflect the larger of 125 percent of the nameplate rating or the Cupertino readiness baseline of 7,200 VA (30A circuit) per CEnC § 150.0(n) and CEC § 230.42(A)(1). Storage-type water heaters are continuous loads.
- Line 22 (EV Charger):** For EV-Ready and EV Charger installation, the calculation must reflect the larger of 125% of the nameplate rating or the Cupertino baseline of 9,600 VA (40A circuit) per CMC § 16.58.400 and CEC § 230.42(A)(1). EV Chargers are continuous loads.
- Line 27:** For new construction, the main panelboard must be provided with a minimum 225A busbar rating for ESS readiness per CEnC § 150.0(s). Per CEC § 230.79(C), the service disconnecting means for a one-family dwelling shall have a rating of not less than 100 amperes, 3-wire.

**Disclaimer:** The applicant is solely responsible for the accuracy of all electrical load calculations and conductor sizing in compliance with the 2025 California Electrical Code and mandatory Electric-Ready standards.